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Besides its use in Mr. Bryce's book, I find "selvas" mentioned in E. W. Heaton's "Scientific Geography; South America," London (1912), at pages 17, 39 and 55. Elsewhere in that book the author seems to get along quite comfortably without the word.

Selva is a Portuguese word like any other, but it is very little used and has no special application to the forests of the Amazon. The Brazilians do not distinguish the forests of the Amazon by any special word; they are called *mattas*, which is the word applied to any and all heavy forests alike.

J. C. BRANNER

RIO DE JANEIRO, BRAZIL,
June 6, 1913

DOES A LOW-PROTEIN DIET PRODUCE RACIAL INFERIORITY?

TO THE EDITOR OF SCIENCE: In your issue of June 13, 1913, is contained a communication by Dr. Edgar T. Wherry entitled: "Does a Low-protein Diet Produce Racial Inferiority?" The purpose of the article is to dispose of two objections that have been raised against such a dietary, by the application of the results of recent investigations. It seems to me that, in attempting the removal of the first objection, the article is open to some misconception, while, in the case of the second objection, the attempted disposal is far from being effective.

Dr. Wherry is presumably dealing with instances of recognized racial inferiority, and the inclusion of the Japanese people in this category, especially by an advocate of the low-protein theory, is a matter of some surprise. That the Japanese exhibit "some points of physical inferiority, or lack energy, aggressiveness, or courage," when compared with the European, for instance, on a protein-rich dietary, is hardly a generally recognized fact, nor is it in harmony with the contentions of Chittenden and others of his belief that in the Japanese we have an instance of a people "who for generations have apparently lived and thrived on a daily ration noticeably low in its content of proteid. . . ." Chittenden

utilizes this fact "as confirmatory evidence, on a large scale, of the perfect safety of lowering the consumption of proteid food to somewhere near the level of the physiological requirements of the body," and believes that "generations of low-proteid feeding, with the temperance and simplicity in dietary methods thereby implied, have certainly not stood in the way of phenomenal development and advancement when the gateway was opened for the ingress of modern ideas from western civilization."¹

The conceptions regarding the etiology of beri-beri have not undergone any radical change in the last year or two. The information that has been accumulated recently in regard to this disease has served to confirm and extend such conceptions, not to revolutionize them. For years it has been definitely known that the use of polished or husked rice is directly or indirectly involved in the causation of beri-beri. In proof of this statement I only need quote the extensive investigations of Fletcher² and of Fraser and Stanton,³ published six and four years ago, the results of which, obtained from large numbers of individuals, point unequivocally to an intimate relation between the consumption of polished rice and incidence to beri-beri. The comparatively recent discovery by several investigators of a constituent in rice-bran which cures the polyneuritis of beri-beri simply confirms the previous work above mentioned. Furthermore, this discovery does not at all militate against the contention that has often been raised that a diet containing a liberal and varied protein value is an effective preventive against beri-beri.

I doubt whether Dr. Wherry would find many dietitians, on either side of the argument, who consider the relation between the protein intake and the incidence to beri-beri one of the "supposedly most typical illustra-

¹ "Nutrition of Man," pp. 222-223.

² William Fletcher, "Rice and Beri-Beri," *Lancet*, June 29, 1907.

³ H. Fraser and A. T. Stanton, "An Enquiry Concerning the Etiology of Beri-Beri," *Lancet*, February 13, 1909.

tions of the unfavorable results of a deficiency of protein in the dietary."

The statement most open to criticism in the article of Dr. Wherry is that concerning the generally recognized inferiority of the native inhabitants of India. A recent estimate obtained by the Rockefeller Sanitary Commission that 60 to 80 per cent. of these people are infected with the hookworm, is supposed to "explain away" this inferiority, without reference at all to the diet in vogue. By those who are familiar with the elaborate investigations of D. McCay of the dietaries of the Bangalis and other races of India, upon which has been based, rightly or wrongly, one of the most formidable arguments against the well-known views of Chittenden, this statement of Dr. Wherry must have been read with no small degree of interest and curiosity.

In Publication No. 6 of the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease, entitled, "Hookworm Infection in Foreign Countries," the estimate above quoted of the degree of infection in India is given on the authority of various medical men who are undoubtedly well-informed on the matter. However, the American Vice-consul, C. B. Perry, is quoted as saying (1911):

Nothing is being done by governmental agencies to alleviate or eradicate the disease except the usual sanitary measures for the prevention of fecal contamination of the soil and hospital treatment of incapacitated patients. . . . The conclusion that I have arrived at is that though widely prevalent in India, the disease is not considered of a dangerous nature and no special steps have been deemed necessary as yet to combat it.

An editorial appearing in the *Indian Medical Gazette*, a journal from which the Rockefeller Sanitary Commission obtained much of its information concerning conditions in India, in the issue of May, 1913, is of great interest in this connection. In commenting upon a clinical method recently investigated by Stiles and Altman of this country, for determining the completeness of cure in ankylostomiasis (hookworm disease), the following is said:

It would be interesting to compare the figures with those of India, but in attempting to do so one is faced at once by the difficulty that the question seems to have been approached in the two countries from entirely different points of view. In America, it is evident from the huge number of worms per case, which is well over 1,000, that those are being treated who are suffering from ill-health as the result of infection, that is to say, that they are real instances of ankylostomiasis. In India, on the contrary, the matter has been chiefly taken up as a routine examination of all prisoners admitted into a jail, and most of such men are healthy. In these cases an infection of 100 worms appears to be quite unusual, and quite naturally an infection of a dozen worms will make no appreciable difference to a man. These slight infections are the rule in India, the percentage infected varies in different parts from about 35 to 75 in men of the laboring classes, and the mild infection seems to have no effect on the health of the host. This general mild infection makes any anti-ankylostoma campaign quite hopeless in this country for many years to come. Severe cases do, of course, occur, but, speaking generally, we hear little of them. Their relative distribution in different parts of India is unknown. Our knowledge of ankylostomes in India is quite meager, in spite of the amount of work which has been done by I. M. S. officers, and much of the work will have to be done over again.

Apparently, hookworm infection, while common in India—at least among the laboring classes—is in the great majority of cases extremely light and can not be supposed to exert any noticeable effect upon health and development. To ascribe the racial inferiority of the inhabitants of India, therefore, to such infection seems entirely unwarranted from the data at hand.

Thus, the question of Dr. Wherry, "Is there any evidence whatever that a low protein diet ever causes or aids in the production of racial inferiority," is in precisely the same status now as it was before his article appeared. In fact, however much one may disagree with the interpretation that McCay puts upon his own data, the unprejudiced must admit that the data are extremely suggestive of a deleterious effect of long-continued adherence to the low-protein dietary. However much one may be-

lieve that the low physical development and efficiency of the native races of India as compared with the Eurasian or the European in the same country and under the same conditions, are due to unsuitable food materials, insufficient diet during the period of growth, or to any other factor than the low-protein intakes of the adult population, the possibility that the latter is a contributory factor at least can not be denied, nor can it even be supposed to be very improbable.

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THE SPIRIT OF AGRICULTURAL EDUCATION

THE recent communication to *SCIENCE* for May 9 by Dr. Raymond Pearl, and the discussion thereon in *SCIENCE* of June 13, by Dr. Davenport, causes one to surmise there are at least two opinions in the United States relative to research in experiment stations.

Dr. Pearl apparently deplored the seeming fact that experiment station workers must "supplicate the great Goddess Truth with one ear closely applied to the ground in order that he must catch the first and faintest murmur of 'What the public wants.'" He did not say "the public be damned" and perhaps he did not mean to. He did, however, give at least one reader the impression that he has small faith in farmers as patrons of experiment-station work. He apparently did not counsel experiment station workers to make an effort to adapt their results to the understanding and needs of "uncritical farmers." He would seem to think that this genus farmer, true to type as he is, had better be taught to look "through a glass darkly."

If agricultural experiment stations were established for any particular purpose toward our civilization, it was and is to serve the needs of farming people. It is a part of their job to adapt themselves and their work to the needs of such people. If they will do that very genuinely and sincerely, they will find these same people appreciative. If in any such instance they do not respond so quickly as they should, the greater is the obligation upon the

experiment station and its associated college to help them. Who does the work, anyway, which supports these various experiment stations, from the favored state of Maine to the other ocean?

These paragraphs are not written solely to disagree with so evidently an illustrious worshiper of the "great goddess Truth" with his "ear to the ground." Such would hardly be worth while. But it has virtually been charged in public print, by a reputable member of an experiment station staff, that much work and many workers of experiment stations are insincere. Such a charge, insidious as it is, does most insidious damage—undemocratic as it is in spirit, it would lead logically to the discrediting of our experiment stations as unworthy of support in a democracy.

If there is anything the matter with the land-grant colleges and experiment stations, it is that they have occasionally loaded upon them such pseudo-scientific junk as Dr. Pearl might apparently like to have our "uncritical farmers" unwittingly support. It is a mighty serious matter that if any of our land-grant institutions fail of popular support it will be because they fall victims to pseudo-science.

By pseudo-science I mean that so-called pure scientist who does his work or holds his job (and draws his salary) under the name of agriculture, with contempt in his heart for real farm people. Just such codfish aristocracy has failed visibly to accomplish much for the peasant farmers of Germany. However erudite it may be, it will fail of accomplishing much for American farmer citizens, as such.

Right now the land-grant colleges and experiment stations are on trial to show what real service they are capable of rendering to our farm citizenship. It is within their power to make a most conspicuous success.

If our American agricultural institutions should continue to organize themselves around pseudo-scientific units—*e. g.*, agricultural chemistry, agricultural botany, agricultural economics, agricultural what-not, or any old